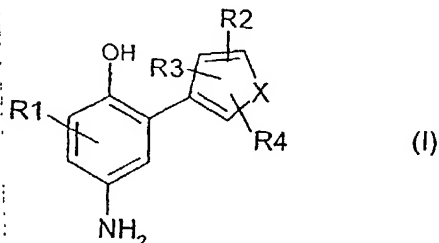


PATENT CLAIMS

1. p-Aminophenol derivatives of general formula (I) or physiologically tolerated, water-soluble salts thereof



wherein

X denotes oxygen, sulfur or NR5,

R1 denotes hydrogen, a halogen atom, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group or a C₁-C₄-alkoxy group;

R2 and R4 independently of each other denote hydrogen, a hydroxyl group, a halogen atom, a cyano group, a C₁-C₄-alkoxy group, a C₁-C₆-alkyl group, a C₁-C₄-alkyl thioether group, a mercapto group, a nitro group, an amino group, a C₁-C₆-alkylamino group, a (C₁-C₆)-dialkylamino group, a -C(OH) group, a -C(O)CH₃ group, a -C(O)CF₃ group, an -Si(CH₃)₃ group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group, a -CH=CHR6 group, a -(CH₂)_p-CO₂R7 group or a -(CH₂)_p-R8 group (with p = 1, 2, 3 or 4), a -C(R9)=NR10 group or a C(R11)H-NR12R13 group;

R3 denotes hydrogen, a halogen atom, a C₁-C₆-alkyl group or a -C(O)H group;

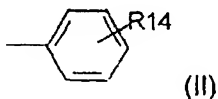
R5 denotes hydrogen, a C₁-C₆-alkyl group, a C₁-C₄-hydroxyalkyl group, a phenyl group or an acetyl group;

R6 denotes hydrogen, a hydroxyl group, a nitro group, an amino group, a -CO₂R7 group or a -C(O)CH₃ group;

R7, R9 and R11 independently of each other denote hydrogen or a C₁-C₄-alkyl group;

R8 denotes an amino group or a nitrile group;

R10, R12 and R13 independently of each other denote hydrogen, a hydroxyl group, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group or a radical of formula (II)



and

R14 denotes hydrogen, an amino group or a hydroxyl group.

2. p-Aminophenol derivative according to Claim 1, characterized in that it is selected from the group consisting of 4-amino-2-(3-thienyl)phenol; 4-amino-2-(3-furyl)phenol; 4-amino-2-(pyrrol-3-yl)phenol; 4-amino-2-(1-methyl-1H-pyrrol-3-yl)phenol; 4-amino-3-chloro-2-(3-thienyl)phenol; 4-amino-3-methyl-2-(3-thienyl)phenol; 4-amino-5-chloro-2-(3-thienyl)phenol; 4-amino-5-methyl-2-(3-thienyl)phenol; 4-amino-6-chloro-2-(3-thienyl)phenol; 4-amino-6-methyl-2-(3-thienyl)phenol; 4-amino-2-(2-acetyl-3-thienyl)phenol; 4-amino-2-(2-chloro-3-thienyl)phenol; 4-amino-2-(2-formyl-3-thienyl)phenol; 4-amino-2-(2-methyl-3-thienyl)phenol; 4-amino-2-(4-acetyl-3-thienyl)phenol; 4-amino-2-(4-chloro-3-thienyl)phenol; 4-amino-2-(4-formyl-3-thienyl)phenol; 4-amino-2-(4-methyl-3-thienyl)phenol; 4-amino-2-(5-acetyl-3-thienyl)phenol; 4-amino-2-(5-chloro-3-thienyl)phenol; 4-amino-2-(5-methyl-3-thienyl)phenol and the physiologically tolerated salts thereof.

3. p-Aminophenol derivative according to Claim 1 or 2, characterized in that in formula (I) (i) R₁ denotes hydrogen and/or (ii) at least one of groups R₂, R₃ and R₄ denotes hydrogen or a methyl group and/or (iii) X denotes sulfur or oxygen.

4. p-Aminophenol derivative according to one of Claims 1 to 3, characterized in that it is selected from the group consisting of 4-amino-2-(3-thienyl)phenol; 4-amino-2-(4-methyl-3-thienyl)phenol and 4-amino-2-(2-chloro-3-thienyl)phenol and physiologically tolerated salts thereof.

5. Preparation for oxidative dyeing of keratin fibers based on a developer-coupler combination, characterized in that said preparation contains as the developer at least one p-aminophenol derivative of formula (I) according to one of Claims 1 to 4.

6. Preparation according to Claim 5, characterized in that it contains the p-aminophenol derivative of formula (I) in an amount from 0.005 to 20.0 wt. %.

7. Preparation according to Claim 5 or 6, characterized in that the coupler is selected from the group consisting of 2,6-diaminopyridine, 2-amino-4-[(2-hydroxyethyl)amino]anisole, 2,4-diamino-1-fluoro-5-methylbenzene, 2,4-diamino-1-methoxy-5-methylbenzene, 2,4-diamino-1-ethoxy-5-methylbenzene, 2,4-diamino-1-(2-hydroxyethoxy)-5-methylbenzene, 2,4-di[(2-hydroxyethyl)amino]-1,5-dimethoxybenzene, 2,3-diamino-6-methoxypyridine, 3-amino-6-methoxy-2-(methylamino)pyridine, 2,6-diamino-3,5-dimethoxypyridine, 3,5-diamino-2,6-dimethoxypyridine, 1,3-diaminobenzene, 2,4-diamino-1-(2-hydroxyethoxy)benzene, 2,4-diamino-1,5-di-(2-hydroxyethoxy)benzene, 1-(2-aminoethoxy)-2,4-diaminobenzene, 2-amino-1-(2-hydroxyethoxy)-4-methylaminobenzene, 2,4-diaminophenoxyacetic acid, 3-[di-(2-hydroxyethyl)amino]aniline, 4-amino-2-di[(2-hydroxyethyl)amino]-1-ethoxybenzene, 5-methyl-2-(1-methylethyl)phenol, 3-[(2-hydroxyethyl)amino]aniline, 3-[(2-aminoethyl)amino]aniline, 1,3-di-(2,4-diaminophenoxy)propane, di-(2,4-diaminophenoxy)methane, 1,3-diamino-2,4-dimethoxybenzene, 2,6-bis-(2-hydroxyethyl)aminotoluene, 4-hydroxyindole, 3-dimethylaminophenol, 3-diethylaminophenol, 5-amino-2-methylphenol, 5-amino-4-fluoro-2-methylphenol, 5-amino-4-methoxy-2-methylphenol, 5-amino-4-ethoxy-2-methylphenol, 3-amino-2,4-dichlorophenol, 5-amino-2,4-

dichlorophenol, 3-amino-2-methylphenol, 3-amino-2-chloro-6-methylphenol, 3-aminophenol, 2-[(3-hydroxyphenyl)amino]acetamide, 5-[(2-hydroxyethyl)amino]-2-methylphenol, 3-[(2-hydroxyethyl)amino]phenol, 3-[(2-methoxyethyl)amino]phenol, 5-amino-2-ethylphenol, 2-(4-amino-2-hydroxyphenoxy)ethanol, 5-[(3-hydroxypropyl)amino]-2-methylphenol, 3-[(2,3-dihydroxypropyl)amino]-2-methylphenol, 3-[(2-hydroxyethyl)amino]-2-methylphenol, 2-amino-3-hydroxypyridine, 5-amino-4-chloro-2-methylphenol, 1-naphthol, 1,5-dihydroxynaphthalene, 1,7-dihydroxynaphthalene, 2,3-dihydroxynaphthalene, 2,7-dihydroxynaphthalene, 2-methyl-1-naphthol acetate, 1,3-dihydroxybenzene, 1-chloro-2,4-dihydroxybenzene, 2-chloro-1,3-dihydroxybenzene, 1,2-dichloro-3,5-dihydroxy-4-methylbenzene, 1,5-dichloro-2,4-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 3,4-methylenedioxyphenol, 3,4-methylenedioxyaniline, 5-[(2-hydroxyethyl)amino]-1,3-benzodioxol, 6-bromo-1-hydroxy-3,4-methylenedioxybenzene, 3,4-diaminobenzoic acid, 3,4-dihydro-6-hydroxy-1,4(2H)-benzoxazine, 6-amino-3,4-dihydro-1,4(2H)benzoxazine, 3-methyl-1-phenyl-5-pyrazolone, 5,6-dihydroxyindole, 5,6-dihydroxyindoline, 5-hydroxyindole, 6-hydroxyindole, 7-hydroxyindole and 2,3-indolinedione.

8. Preparation according to one of Claims 5 to 7, characterized in that it contains the developers and couplers in a total amount of 0.005 to 20 wt.%, based on the total amount of colorant.

9. Preparation according to one of Claims 5 to 8, characterized in that it contains additionally at least one direct dye.

10. Preparation according to one of Claims 5 to 9, characterized in that it is a hair colorant.